IT1090 – Information Systems and Data Modeling   **Semester 2**

> **Objective**: At the end of this lab session you should be able to use Aggregate functions with correct syntax.
>
> Furthermore, you will understand where we can use these functions.

Aggregate Functions

Section 1

What is an Aggregate Function?

An aggregate function performs a calculation on a set of values, and returns a single value. Aggregate functions ignore null values. Aggregate functions allows us to get summarized data from the database.

From a university database, management/external people may require following reports;

- Number of students in the university
- Least cost Course available in the university
- Average marks a student achieved for a particular module in an exam

In order to produce the above reports we need to make use of Aggregate functions. Let's look at some of the Aggregate functions given in Table 1.

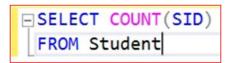| Function	Description
COUNT()	Function returns the number of rows that matches a specified criterion.
SUM()	Function returns the total sum of a numeric column.
MAX()	Function returns the largest value of the selected column.
MIN()	Function returns the smallest value of the selected column.
AVG()	Function returns the average value of a numeric column.
ROUND()	used to round the value up to a specific decimal places
FIRST()	Returns the first value in a column.
LAST()	Returns the last value in a column.

Table 1

Section 2

Example

a. How many students are in the university?

Step 01

Now you must count the amount of entries in the Student table,

```
SELECT COUNT(SID)
FROM Student
```

Step 02

Then answer is like this,

	(No column name)
1	12

You can check this answer using select(*) from Student quarry,

	SID	Sname	Address	dob	NIC	CID
1	CN18384756	Kamal	No122, Rose street, matale	1994-05-02	946785467v	CSNE
2	CN19465738	Sampath	No173, New kandy Road, kaduwella	1996-11-20	968764567v	CSNE
3	CS18223645	kalani	No08 , Gamini Road, Anuradhapura	1996-10-11	968564857v	CS
4	CS18234867	Damith	No125 , 1st street, kurungala	1996-02-15	968763456v	CS
5	DS18234876	Pubudu	No678 , 3rd new lane, Maharahgama	1994-11-08	948763759v	DS
6	DS18375688	Kamani	No10 , new street, jaffna	1994-03-05	948763456v	DS
7	IS18758649	Jayni	No111, Perera street, kurunegala	1998-09-07	982359856v	ISE
8	IS19234876	Dulina	No124 , 2nd street, colombo10	1998-12-08	983485764v	ISE
9	IT18234568	Ann	No12, Kings street, colombo	1996-11-11	961234587v	IT
10	IT19275687	Rayan	No14, flower street, colombo12	1994-01-10	945673456v	IT
11	SE19238567	Malith	No08, st.thomas street, Kandy	1992-12-20	922356785v	SE
12	SE20284567	Pooja	No15, lakshmi Road, jaffna	1996-08-07	965678645v	SE

12 entries

Exercise

a. How many students are in the university?

b. How many courses are offered by the university?

c. Display the above result with the title "Number of courses".

d. How many modules are there which have 03 credits only?

e. If one student wants to register all courses at ones, what is the total course fee that he/she wants to pay?

f. What is the highest course fee?

g. What is the lowest course fee?

h. What is the Average courses fee of a course?